Slope Intercept form

Friday, February 12, 2016 10:11 AM

Date: _____

4.5 The Slope Intercept Form of the Line

Graph the following equation and determine the slope of the line. $y = -2x + 3$

m

b

$y = -2x + 3$

$= -2(0) + 3$

$= 3$

$y = -2(1) + 3$

$= -2 + 3$

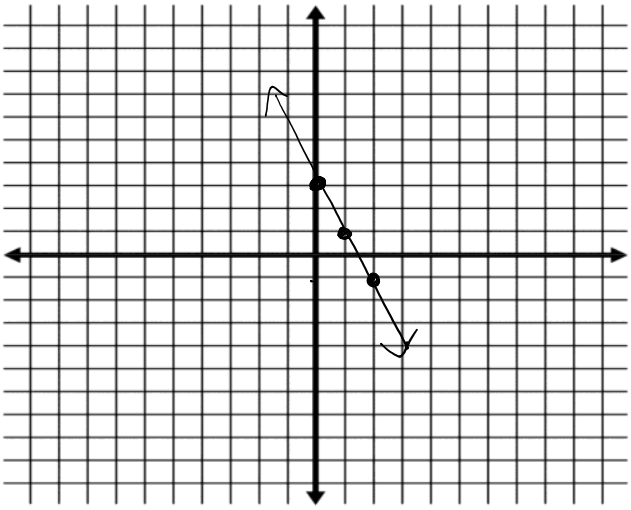
$= 1$

$y = -2(2) + 3$

$= -4 + 3 = -1$

x	y
0	3
1	1
2	-1

+1 (x), -2, -2



This gives us the **slope-intercept form** of the equation.

$y = mx + b$ ← y-intercept $(0, y)$ where your line crosses the y-axis

slope $= \frac{\text{rise}}{\text{run}}$

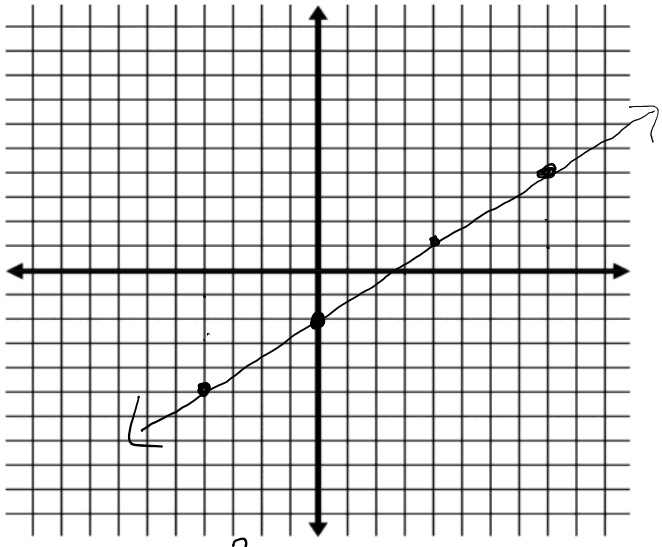
Example 1: Graph and find the slope of the equation:

$y = \frac{3}{4}x - 2$

x	y
0	-2
4	1
8	4
-4	-5

$m = \frac{3}{4}$

y-int $= -2$



$y = \frac{3}{4}(4) - 2$

$= 3 - 2$

$y = \frac{3}{4}(8) - 2$

$= 6 - 2$

= 1 = 4

Example 2: Graph and find the slope of the equation: $y = \frac{2}{5}x - 4$

x	y
0	-4
5	-2

b

$m = \frac{2}{5}$

up 2 down 2

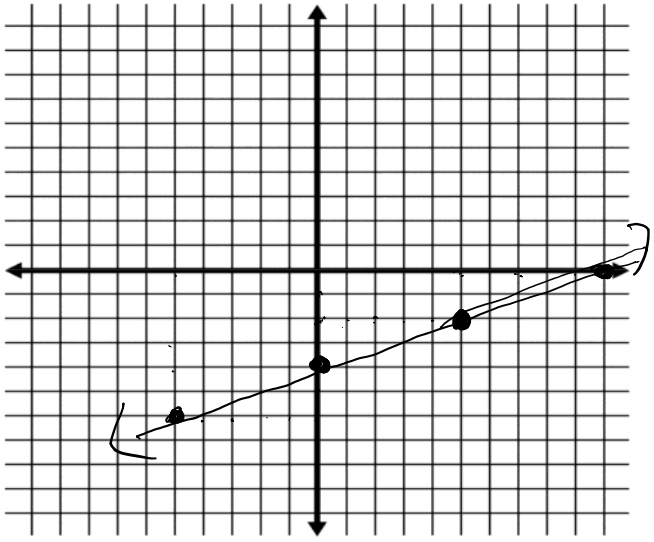
right 5 left 5

y-int: -4

$-2 = \frac{2}{5}(5) - 4$

$-2 = 2 - 4$

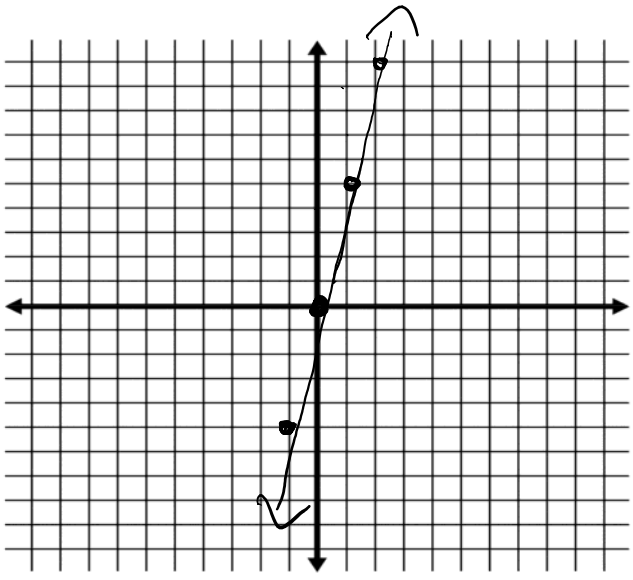
$-2 = -2$ ✓



Example 3: Graph and find the slope of the equation: $y = 5x + 0$

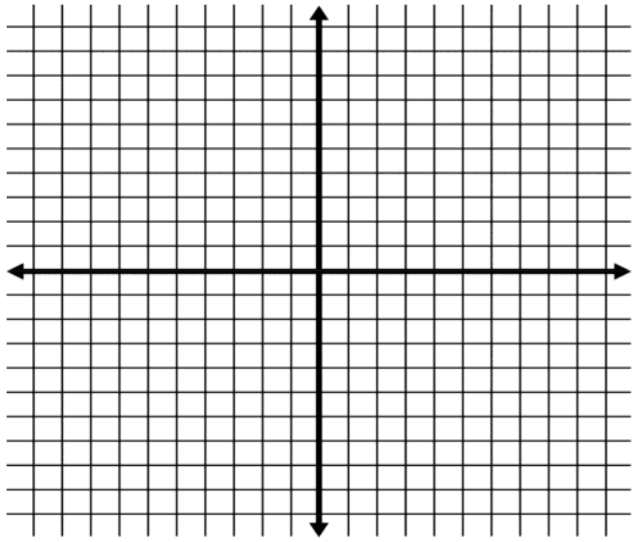
$m = \frac{5}{1}$ y int: 0

x	y
0	0



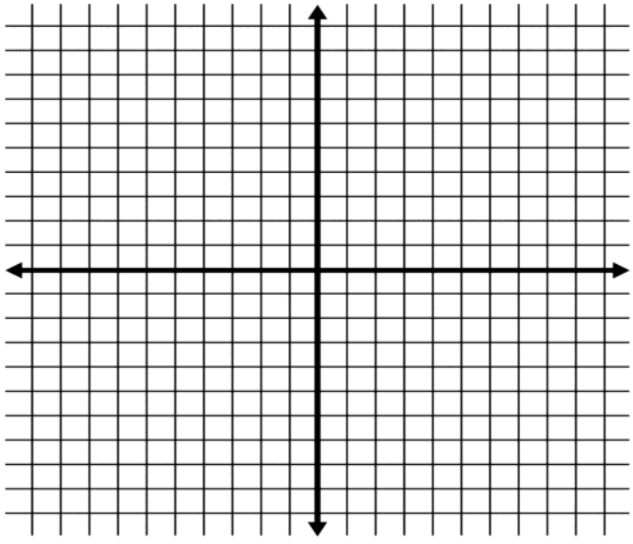
Example 4: Graph and find the slope of the equation: $y = -x + 4$

x	y



Example 5: Graph and find the slope of the equation: $y = -3x + 1$

x	y



Example 6: Write and graph the equation of a line with a slope of $\frac{3}{4}$ and y-intercept of -5.

m

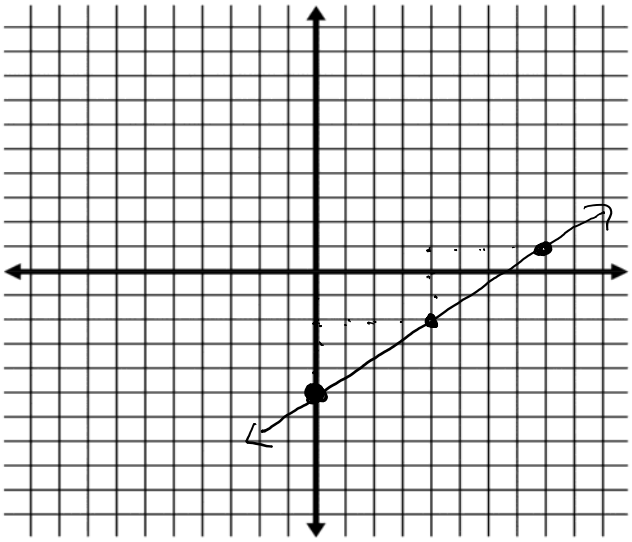
b

$y = mx + b$

$y = \frac{3}{4}x - 5$

3 → up

4 → right



Worksheet: Graphing Slope-Intercept

Due Friday

Bring graph paper for Friday.